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STRIKER, STRIKER & STENBY
103 East Neck Road
Huntington, NY 11743

EXAMINER
DEHGHAN, QUEENIE S

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/625,582
Filing Date: July 23, 2003
Appellant(s): BARTSCH, REINER

Michael J. Striker
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 24, 2008 appealing from the Office action mailed May 28, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. Rejection of claims 32-46 under 35 U.S.C. 112, 1st paragraph.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,516,998	RITT et al.	5-1985
3,985,535	BENNETT et al.	10-1976
4,010,022	SCHUL	3-1977
2004/0176237	OTT et al.	9-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 32-39 and 41-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 32, 36, 41, 42, 43, and 45 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the linking step between forming a bottom and opening the bottom. It is unclear how a bottom is opened if there is no indication that it is closed. There seems to lack a nexus between the two method steps.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 32-35 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritt et al. (4,516,998) in view of Bennett et al. (3,985,535). Ritt et al. disclose a method for making small glass containers from hollow glass tube that is clamped in a vertical orientation, wherein the tube has an interior surface, an open upper end and a lower end. Furthermore, Ritt et al. disclose thermally cutting the tube to length, forming a tube piece for discard and a bottom at the lower end of the tube, heating the lower end of the hollow glass tube to thermally open the bottom, forming a mouth of the glass container at the lower end, and melting through the tube at a position corresponding to a height of the small glass container (figure 1, col. 1 lines 10-52). Ritt et al. further disclose the partially closing of the tube at the open upper end by sealing the upper end and creating a dot shaped opening in the upper end. Doing so produces an overpressure during the heating of the lower end, but preventing excessive overpressure in the tube (col. 2 lines 1-9, 40-50). Additionally Ritt et al. disclose manufacturing small glass containers, such as ampoules with the steps mentioned above in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing with a jet flame (col. 1 lines 53-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to expect that volatile glass components encompasses evaporated alkali compounds, especially since it is common for a glass preform to contain alkali compounds in its composition.

5. This is further exemplified by Bennett et al. Bennett et al. disclose ampoules that are typically made of an alkali-metal containing glass, such as aluminosilicate (col. 1 lines 60-63). In using the aluminosilicate glass of Bennett et al., Ritt et al. process would reduce the contamination of the alkali compounds resulting from thermal processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expect the small glass containers of Ritt et al. to be made of aluminosilicate glass because Bennett et al. has demonstrated that is known in the art to utilize such a glass composition for the making of ampoules and for the strength that aluminosilicate glass provides to the ampoules made.

6. Additionally, as mentioned above, Ritt et al. disclose a partial closing of the tube at the upper end with a through-going opening so that an overpressure is produced by constricting a gas flow path through said open upper end during said thermal processing while keeping said open upper end sufficiently open so that an excessive overpressure that would otherwise damage the glass tube is not produced (col. 1 line 53 to col. 2 line 9, col. 3 lines 15-33). Although a stopper is not specifically used as the sealing/constricting means, the same effect is achieved by the closed off end with an opening as that of a dimensioned stopper with a through-going opening. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize known methods or means, such as a stopper with a through-going opening, as an equivalent means for sealing one end of a tube, while keeping the end sufficiently open so an excessive overpressure is not produced because stoppers with through-going openings are commonly used for sealing up an end of tube.

7. Claims 36-39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritt et al. (4,516,998) in view of Bennett et al. (3,985,535) and Schul (4,010,022). Ritt et al. disclose a method for making small glass containers, such as ampoules, from hollow glass tube that is clamped in a vertical orientation, wherein the tube has an interior surface, an open upper end and a lower end. Furthermore, Ritt et al. disclose thermally cutting the tube to length, forming a tube piece for discard and a bottom at the lower end of the tube, heating the lower end of the hollow glass tube with a jet flame to thermally open the bottom and forming a mouth of the glass container at the lower end and melting through the tube at a position corresponding to a height of the small glass container (figure 1, col. 1 lines 10-52). Ritt et al. also disclose the importance of creating an overpressure in the tube in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing with a jet flame (col. 1 lines 53-59, col. 2 lines 1-9, 40-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to expect that volatile glass components encompasses evaporated alkali compounds, especially since it is common for a glass preform to contain alkali compounds in its composition.

8. This is further exemplified by Bennett et al. Bennett et al. disclose ampoules that are typically made of an alkali-metal containing glass, such as aluminosilicate (col. 1 lines 60-63). In using the aluminosilicate glass of Bennett et al., Ritt et al. process would reduce the contamination of the alkali compounds resulting from thermal processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expect the small glass containers of Ritt et al. to be made of

aluminosilicate glass because Bennett et al. has demonstrated that is known in the art to utilize such a glass composition for the making of ampoules and for the strength that aluminosilicate glass provides to the ampoules made.

9. As mentioned above, Ritt et al. disclose the importance of creating an overpressure in the tube in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing (col. 1 line 53 to col. 2 line 9, col. 3 lines 15-33). Although Ritt et al. teaches creating an overpressure by sealing one end of the tube with an opening, one of ordinary skill in the art would recognize that there are other ways to accomplish an overpressure in the tube. Schul teaches blowing gas into and through a glass tube being processed in order to create an overpressure in the interior of the tube (col. 2 lines 65-68). Although Schul teaches an overpressure in a tube to accomplish a different goal, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the known method of Schul of blowing gas into a tube in order to create the overpressure of Ritt et al. in order to prevent contamination of the interior surface.

10. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritt et al. (4,516,998) in view of Ott et al. (2004/0176237). Ritt et al. disclose a method for making small glass containers from hollow glass tube that is clamped in a vertical orientation, wherein the tube has an interior surface, an open upper end and a lower end. Furthermore, Ritt et al. disclose thermally cutting the tube to length, forming a tube piece for discard and a bottom at the lower end of the tube, heating the lower end of the hollow glass tube to thermally open the bottom, forming a mouth of the glass

container at the lower end, and melting through the tube at a position corresponding to a height of the small glass container (figure 1, col. 1 lines 10-52). Ritt et al. further disclose the partially closing of the tube at the open upper end by sealing the upper end and creating a dot shaped opening in the upper end. Doing so produces an overpressure during the heating of the lower end, but preventing excessive overpressure in the tube (col. 2 lines 1-9, 40-50).

11. Additionally Ritt et al. disclose manufacturing small glass containers, such as ampoules with the steps mentioned above in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing with a jet flame ((col. 1 line 53 to col. 2 line 9, col. 3 lines 15-33)). Ott et al. also teaches the manufacturing of small glass containers. Specifically, Ott et al. disclose a glass composition comprising SiO_2, 75; B_2O_3, 10.5; Al_2O_3, 5; Na_2O, 7; CaO, 1.5; and BaO, <<1, in percent by weight on an oxide basis that is used for the manufacturing of ampoules ([0045], [0057]). It would have been obvious to one of ordinary skill in the art at the time of the invention to expect that volatile glass components generated during thermal processing of the glass would encompass evaporated alkali compounds, such as sodium borate especially since the glass tube contains oxides of sodium and boron in its composition. In using the glass of Ott et al., Ritt et al. process would reduce the contamination of the alkali compounds resulting from thermal processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expect the small glass containers of Ritt et al. to be made of the glass composition of Ott because Ott has demonstrated that is known in

the art to utilize such a glass composition for the making of ampoules and for the high chemical resistance that the glass provides to the ampoules made.

12. Additionally, as mentioned above, Ritt et al. disclose a partial closing of the tube at the upper end with a through-going opening so that an overpressure is produced by constricting a gas flow path through said open upper end during said thermal processing while keeping said open upper end sufficiently open so that an excessive overpressure that would otherwise damage the glass tube is not produced (col. 1 line 53 to col. 2 line 9, col. 3 lines 15-33). Although a stopper is not specifically used as the sealing/constricting means, the same effect is achieved by the closed off end with an opening as that of a dimensioned stopper with a through-going opening. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize known methods or means, such as a stopper with a through-going opening, as an equivalent means for sealing one end of a tube, while keeping the end sufficiently open so an excessive overpressure is not produced because stoppers with through-going openings are commonly used for sealing up an end of tube.

13. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritt et al. (4,516,998) in view of Ott et al. (2004/0176237) and Schul (4,010,022). Ritt et al. disclose a method for making small glass containers from hollow glass tube that is clamped in a vertical orientation, wherein the tube has an interior surface, an open upper end and a lower end. Furthermore, Ritt et al. disclose thermally cutting the tube to length, forming a tube piece for discard and a bottom at the lower end of the tube, heating the lower end of the hollow glass tube to thermally open the bottom,

forming a mouth of the glass container at the lower end, and melting through the tube at a position corresponding to a height of the small glass container (figure 1, col. 1 lines 10-52). Ritt et al. further disclose the partially closing of the tube at the open upper end by sealing the upper end and creating a dot shaped opening in the upper end. Doing so produces an overpressure during the heating of the lower end, but preventing excessive overpressure in the tube (col. 2 lines 1-9, 40-50).

14. Additionally Ritt et al. disclose manufacturing small glass containers, such as ampoules with the steps mentioned above in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing with a jet flame (col. 1 lines 53-59). This is further exemplified by Ott et al. Ott et al. disclose a glass composition comprising SiO_2, 75; B_2O_3, 10.5; Al_2O_3, 5; Na_2O, 7; CaO, 1.5; and BaO, <<1, in percent by weight on an oxide basis that is used for the manufacturing of ampoules ([0045], [0057]). It would have been obvious to one of ordinary skill in the art at the time of the invention to expect that volatile glass components generated during thermal processing of the glass would encompass evaporated alkali compounds, such as sodium borate especially since the glass tube contains oxides of sodium and boron in its composition and also, as disclosed by the applicant that it is known that sodium borate is released during thermal processing. In using the glass of Ott et al., Ritt et al. process would reduce the contamination of the alkali compounds resulting from thermal processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expect the small glass containers of Ritt et al. to be made of the glass composition of Ott because Ott has

demonstrated that is known in the art to utilize such a glass composition for the making of ampoules and for the high chemical resistance that the glass provides to the ampoules made.

15. As mentioned above, Ritt et al. disclose the importance of creating an overpressure in the tube in order to prevent contamination from volatile glass components that are blown into the interior of the glass tube during thermal processing. Although Ritt et al. teaches creating an overpressure by sealing one end of the tube with an opening, one of ordinary skill in the art would recognize that there are other ways to accomplish an overpressure in the tube (col. 1 line 53 to col. 2 line 9, col. 3 lines 15-33). Schul teaches blowing gas into and through a glass tube being processed in order to create an overpressure in the interior of the tube (col. 2 lines 65-68). Although Schul teaches an overpressure in a tube to accomplish a different goal, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the known method of Schul of blowing gas into a tube in order to create the overpressure of Ritt et al. in order to prevent contamination of the interior surface.

(10) Response to Argument

Rejection of claims 32-46 under 35 U.S.C. 112, 2nd paragraph

Independent claims 32, 36, 42, 43, 45 and dependent claim 41 recites a method for processing a glass tube which is interpreted to comprise the following steps: cutting a main glass tube that is clamped in a vertical orientation, discarding the lower tube piece cut off of the main tube, and opening a bottom of the main glass tube. A rejection for indefiniteness was presented for the opening step. The indefiniteness lies in how a

bottom of the main tube can be opened when it does not appear to be closed (either partially or completely). Therefore there lacks a nexus between the cutting step and the opening step. The applicant argues the bottom does not need to be completely closed to be opened. This is correct. The Examiner has not alleged that the bottom be completely closed. Instead, the bottom does not appear to be closed at all, whether partially or completely. The applicant also provides an interpretation of the term opening to imply a widening of the opening at the bottom of the tube. The general definition of the term "opening" is to open something that is closed. If the intention is to widen an opening, it is noted that widening is not claimed. In conclusion, it is unclear how a bottom can be opened if there are no claimed steps indicating that it was closed (either partially or completely) to begin with. Furthermore, in light of the art used in the rejection, the instant claims will be given the assumption that the glass tube becomes closed at the bottom while the cutting is performed.

Rejection of claims 32-35 and 40-41 under 35 U.S.C. 103(a) over Ritt et al. in view of Bennett et al.

The applicant argues the limitation that an overpressure is produced ....*during thermal processing* should be considered and implies this limitation was not present in the rejection. This is incorrect. The rejection does cover the presence of an overpressure during thermal processing, as can be seen in paragraph 6 of the Grounds of Rejection section above. The applicant does not offer evidence for how this limitation was neglected in the rejection.

The applicant alleges the Ritt reference fails to disclose a stopper present, the use of a stopper during thermal processing, or the insertion of a stopper to partially close the tube. In summary, the applicant argues Ritt does not disclose inserting a stopper into a glass tube for the purpose of producing an overpressure in the glass tube. As mentioned in the rejection, Ritt teaches a method and need for producing an overpressure within a glass tube while manufacturing glass containers. Ritt accomplishes this by sealing off an end of the tube and providing a small opening at the sealed end. This essentially produces the same effect of creating an overpressure in the tube, much the same way a stopper with a through-going opening placed at one end of the tube would. Therefore, it is obvious to one of ordinary skill in the art to substitute one known way for achieving an overpressure, such as a closed end with a hole, with another known way, such as a stopper with an opening, since they both accomplish the same goal. Furthermore, the glass tube of Ritt is sealed with the opening during thermal processing, as indicated in the rejections. The applicant further argues that the sealed end with the dot shape opening of Ritt is not equivalent to the stopper with the through-going opening of the claimed invention because the stopper can be re-used over and over. The applicant also alleges the sealing of the tube and forming of the dot shaped opening needs to be repeated over and over again with the making of each container. This appears to be incorrect. The upper end of the glass tube of Ritt is sealed and a dot shaped opening is formed only once in the process, since it the lower end of the glass tube that is being cut and opened, much like the method steps of the claimed invention. Nonetheless, the effect created by a sealed end with a dot-shaped

opening is the same as that of a stopper with a through-going opening. Therefore, the two methods perform identical functions to achieve the same results and are deemed equivalents.

Rejection of claims 36-39 and 42 under 35 U.S.C. 103(a) over Ritt et al. in view of Bennett et al. and Schul

The applicant presents four brief arguments regarding the Schul reference. First, the applicant argues Schul utilizes a forming gas and does not utilize the term "blowing". The delivery of the gas through the tube of Schul is a blowing of gas through the tube. The ends of the tube of Schul are opened, and the gas delivered to the tube is essentially blown down the length of the tube.

Second, the applicant argues Schul does not teach making glass bottles, but instead the drawing of glass tube while maintaining an overpressure in the tube. Schul presents a method wherein a glass tube is heated and worked and the need for an overpressure inside the tube while being thermally processed. This is similar to the essence of the claimed invention, wherein a glass tube is being thermally processed while providing an overpressure in the tube. Therefore, the method for providing for providing the overpressure as taught by Schul is applicable.

Third, the applicant points to the material of the glass tube Schul. Schul was used to teach a means and need for providing an overpressure within a glass tube while it is being thermally processed. It was not used as a reference for the glass material of the tube.

Fourth, the applicant argues the overpressure of Schul was used for a different purpose, to provide diameter control of the tube. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Rejection of claims 43 and 44 under 35 U.S.C. 103(a) over Ritt et al. in view of Ott et al.

The arguments presented under this rejection regarding Ritt are repeated from the arguments presented in the rejection of claim 32, as discussed above.

The applicant does present one additional argument. The applicants points to the specification which shows that the use of the overpressure in the glass tube during thermal processing produces the unexpected result of reducing deposits on the interior surfaces of the glass bottle by a factor of 2. As discussed above, the sealed end with a dot shaped opening of Ritt produces an overpressure in the tube, much like the stopper of the claimed invention. Ritt further teaches that the overpressure prevents impurities from entering and depositing. Hence, the overpressure, as taught by Ritt accomplishes the same goal as the claimed invention, to reduce the deposit of volatile glass components during thermal processing.

Rejection of claims 45 and 46 under 35 U.S.C. 103(a) over Ritt et al. in view of Ott et al. and Schul

The arguments presented under this rejection regarding Ritt are repeated from the arguments presented in the rejection of claims 32 and 36, as discussed above.

The arguments presented under this rejection regarding Schul are also repeated from the arguments presented in the rejection of claims 36-39 and 42, as well as the additional argument presented in the rejection of claims 43-44, as discussed above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Queenie Dehghan

/Queenie Dehghan/

Conferees:

Steven Griffin

/Steven P. Griffin/

Supervisory Patent Examiner, Art Unit 1791

Jennifer Michener

/Jennifer Michener/

QAS, TC1700